

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listing of claims in the above-identified application.

**Listing of the Claims:**

1 (Cancelled). A buffer circuit that outputs a bias signal that varies linearly with an input signal, the buffer circuit comprising:

- an input emitter-follower stage that receives the input signal and produces the bias signal at an output terminal;

- a gain stage coupled to the emitter-follower stage;

- a load coupled to the emitter-follower stage; and

- a feedback circuit coupled to the load and the gain stage wherein the feedback circuit includes a current source coupled to the gain stage.

2 (Cancelled). A bias circuit that outputs a bias signal that varies linearly with an input signal, the bias circuit comprising:

- an input stage that receives the input signal and produces the bias signal at an output terminal that is coupled to a gain stage;

- a load coupled to the input stage at a first terminal; and

- a feedback circuit coupled between the first terminal and the gain stage wherein the feedback circuit includes a current source coupled to the gain stage.

3 (Cancelled). The bias circuit of claim 2, wherein the input stage comprises an emitter-follower input stage.

4 (Cancelled). The bias circuit of claim 2, wherein the gain stage comprises a common-emitter gain stage that has a base terminal.

5 (Cancelled). The bias circuit of claim 4, wherein the feedback circuit is coupled between the first terminal and the base terminal.

6 (Currently Amended). ~~The bias circuit of claim 5,~~ A bias circuit that outputs a bias signal that varies linearly with an input signal, the bias circuit comprising:

an input stage that receives the input signal and produces the bias signal at an output terminal that is coupled to a gain stage, wherein the gain stage comprises a common-emitter gain stage that has a base terminal;

a load coupled to the input stage at a first terminal; and

a feedback circuit coupled between the first terminal, the base terminal, and the gain stage,  
wherein the feedback circuit comprises:

first and second diodes; and

a capacitor coupled to the first and second diodes.

7 (Currently Amended). ~~The bias circuit of claim 2,~~ A bias circuit that outputs a bias signal that varies linearly with an input signal, the bias circuit comprising:

an input stage that receives the input signal and produces the bias signal at an output terminal that is coupled to a gain stage;

a load coupled to the input stage at a first terminal; and

a feedback circuit coupled between the first terminal and the gain stage, wherein the feedback circuit comprises:

first and second diodes; and

a capacitor coupled to the first and second diodes.

8 (Canceled). The bias circuit of claim 2, wherein the feedback circuit comprises a current source coupled to the gain stage.